

**QUESTIONNAIRE COVER LETTER**  
**For BBSI Student Participants**

Subject line: NSF/NIH Bioengineering and Bioinformatics Summer Institutes Program (BBSI)

Dear [insert first name],

We are conducting a study for the National Science Foundation (NSF) and the National Institutes of Health (NIH) on their jointly sponsored Bioengineering and Bioinformatics Summer Institutes (BBSI) program. We would appreciate your participation in this study. Your name was provided to us by [insert PI name] as someone who participated in the BBSI program and **received an NSF stipend** for at least one summer between 2003 and 2007.

**As thanks for your participation, we will send you a \$20 [insert online retailer] gift certificate after we receive your completed questionnaire.**

Our survey questionnaire can be accessed by clicking on this link:

[insert link to questionnaire—respondent's survey ID number will be imbedded]

**If you did not participate in the BBSI program at all between Summer 2003 and Summer 2007, please reply to this e-mail with "NOT BBSI" in the subject line, and we will remove your name from our survey population.**

All of your responses will be strictly confidential and used only in combination with those from other respondents. The ID number included in the survey URL allows us to cross your name off our contact list once we have received your questionnaire and to send you a summary of the study results.

For more information about our study, please see the overview below. If you have any questions or problems with the survey, simply reply to this e-mail.

Please complete and submit the questionnaire as soon as possible. Your participation is important to the success of this study.

Sincerely yours,

Jongwon Park  
Study Director  
SRI International  
1100 Wilson Blvd. Suite 2800  
Arlington, VA 22209

## STUDY OVERVIEW

### **Who funded this study and who is involved?**

The project is funded by the National Science Foundation (NSF) and the National Institutes of Health (NIH), and is conducted by researchers from SRI International (formerly Stanford Research Institute) <http://www.sri.com/policy>.

### **What is the objective of this study?**

The objective of the study is to obtain in-depth information about the activities, outcomes, and impacts of the NSF/NIH Bioengineering and Bioinformatics Summer Institutes (BBSI) program from the perspectives of the faculty and student participants. It is anticipated that the study results will help NSF and NIH better understand the components and characteristics of effective BBSIs and thus will help provide direction to the BBSI program officers at NSF and NIH in their reviews of BBSI proposals and in the advice they give to the principal investigators (PIs) of BBSIs. The study is NOT an evaluation of outcomes from individual BBSI awards or the people involved with them.

### **How was I selected for this study?**

All students, faculty mentors, and PIs who participated in the BBSI program at any time from Summer 2003 to Summer 2007 are included in this study. The PIs of the BBSIs were contacted in 2006 and 2007. They provided us with the names and contact information for students who participated in BBSI activities, as well as faculty who mentored/supervised the students.

### **Can I get a copy of the study results?**

We will send all survey participants a brief summary of the survey results in 2008. The study report will be available on SRI's Web site at <http://www.sri.com/policy/csted/reports/university>.

### **Privacy Notice**

Information from this survey will be retained by the National Science Foundation (NSF), a federal agency, and will be an integral part of its Privacy Act System of Records in accordance with the Privacy Act of 1974 and maintained in the Education and Training System of Records 63 Fed. Reg. 264, 272 (January 5, 1998). These are confidential files accessible only to appropriate NSF officials, their staffs, and their contractors responsible for monitoring, assessing, and evaluating NSF programs. Only data in highly aggregated form will be made available to anyone outside of NSF for research purposes. Data submitted will be used in accordance with criteria established by NSF for monitoring research and education grants, and in response to Public Law 99-383 and 42 USC 1885c.

### **Where can I find more information about the project?**

Contact the SRI study director, Jongwon Park ([jongwon.park@sri.com](mailto:jongwon.park@sri.com), 703-247-8550) or the NSF program manager, Mary Poats ([mpoats@nsf.gov](mailto:mpoats@nsf.gov), 703-292-5357).

NATIONAL SCIENCE FOUNDATION DIRECTORATE FOR ENGINEERING  
NATIONAL INSTITUTE OF BIOMEDICAL IMAGING AND BIOENGINEERING

**BIOENGINEERING AND BIOINFORMATICS  
SUMMER INSTITUTES PROGRAM  
(BBSI)**

**SURVEY OF  
STUDENT PARTICIPANTS**

**Public Burden**

Submission of the requested information is voluntary. Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is [REDACTED]. Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Suzanne Plimpton, Reports Clearance Officer for OMB Collection [REDACTED], Facilities and Operations Branch, Division of Administrative Services, National Science Foundation, 4201 Wilson Blvd., Suite 295, Arlington, VA 22230.

**Your responses to this questionnaire are strictly confidential.**



## SECTION A: APPLYING TO YOUR BBSI

**A1. Before you applied to the BBSI program, from which sources did you obtain information on the overall BBSI program (Column A) and on the specific BBSI you attended (Column B)?**

*(MARK ONE IN COLUMN (A) AND ONE IN COLUMN (B) FOR EACH ROW)*

	(A)		(B)	
	Source for Overall BBSI Program?		Source for Specific BBSI You Attended?	
	Yes	No	Yes	No
The BBSI program director, coordinator, or other administrator..	1	2	1	2
BBSI faculty/researchers.....	1	2	1	2
Current or former BBSI students.....	1	2	1	2
Non-BBSI faculty/researchers.....	1	2	1	2
BBSI brochure.....	1	2	1	2
Conference.....	1	2	1	2
Website (BBSI, NSF, NIH, institution).....	1	2	1	2
Other ( <i>PLEASE SPECIFY</i> ).....	1	2	1	2
_____				
Other ( <i>PLEASE SPECIFY</i> ).....	1	2	1	2
_____				

**A2. How important was each of the following in your decision to apply to the first BBSI you attended?**

*(If an item does not apply to you, please mark the “not important” category.)*

*(MARK ONE IN EACH ROW)*

	Not Important	Somewhat Important	Fairly Important	Extremely Important
<b>Interest in bioengineering and/or bioinformatics</b>				
a. You were interested in taking interdisciplinary coursework.	1	2	3	4
b. You wanted to find out if bioengineering or bioinformatics was for you.	1	2	3	4
c. You thought the research projects of BBSI faculty were interesting.	1	2	3	4
<b>Interest in research</b>				
d. You were interested in the research seminars offered by BBSI.	1	2	3	4
e. You wanted “hands-on” research experience to reinforce what you learned in class.	1	2	3	4
f. Doing research was more appealing than other kinds of summer jobs.	1	2	3	4
g. You wanted to learn more about what it’s like to be a researcher.	1	2	3	4
h. You wanted to find out if going to graduate school was for you.	1	2	3	4
i. You needed to fulfill your school’s or your	1	2	3	4

scholarship's requirements for research.				
j. You needed or wanted the academic credit you could get from doing research.	1	2	3	4
<b>Other reasons</b>				
k. You were impressed with the reputation of the host institution.	1	2	3	4
l. The geographic location of the host institution was appealing.	1	2	3	4
m. The amount of the stipend and support package (housing, meals, etc.) seemed good.	1	2	3	4
n. You liked the living arrangements.	1	2	3	4
o. You liked the social/cultural activities offered.	1	2	3	4
p. You thought the experience would help you get into graduate school.	1	2	3	4
q. You thought the experience would help you get a job.	1	2	3	4
r. Other ( <i>PLEASE SPECIFY</i> ) _____	1	2	3	4
s. Other ( <i>PLEASE SPECIFY</i> ) _____	1	2	3	4

**A3. Which field best describes your research interest at the time you applied to your first BBSI?**

**(MARK ONE)**

- Bioengineering or biomedical engineering... 1
- Bioinformatics..... 2
- Both fields..... 3
- Other field(s) (*PLEASE SPECIFY*)..... 4

\_\_\_\_\_

**A4. Did you apply to any other research programs/projects/summer institutes (including another BBSI) or for any internships for the same summer you first participated in a BBSI?**

**(MARK ONE)**

- Yes..... 1 → CONTINUE
- No..... 2 → SKIP TO SECTION B, QUESTION B1

**A5. Please indicate the types of other research programs/projects/summer institutes or internships to or for which you applied (Column A) for that summer, and whether or not you had any research experiences in those types of programs/projects/summer institutes/internships before you attended a BBSI (Column B). (MARK ONE IN COLUMN (A) AND ONE IN COLUMN (B) FOR EACH ROW)**

	(A)		(B)	
	Did you apply for this type of experience for the same summer as BBSI?		Did you have this type of experience before BBSI?	
	Yes	No	Yes	No
Another BBSI.....	1	2	--not applicable--	
Research Experience for Undergraduates (REU) program.....	1	2	1	2
NIH Summer Research Program.....	1	2	1	2
University research assistantship.....	1	2	1	2
Federal work-study.....	1	2	1	2
Internship (in government, industry, non-profit organization).....				
Other summer research program ( <i>PLEASE SPECIFY</i> ).....	1	2	1	2
<hr/>				
Other summer research program ( <i>PLEASE SPECIFY</i> ).....	1	2	1	2
<hr/>				

**A6. What was your class level and cumulative Grade Point Average (GPA) at the end of the academic year (May or June) before you started your first BBSI summer?**

<b><u>CLASS LEVEL</u></b> ( <i>MARK ONE</i> )	<b><u>CUMULATIVE GPA</u></b> ( <i>ENTER YOUR BEST ESTIMATE</i> )
Sophomore.....1.	Have no idea.....999
Junior.....2.	Your GPA.....____.____
Senior.....3.	Out of a possible...____.____
New graduate.....4.	
Graduate student with one or more semesters of graduate school.....5.	

**A7. If you have any comments about the BBSI application process, please enter them here.**

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## SECTION B: YOUR BBSI EXPERIENCE

*NOTE: If you participated in a BBSI for more than one summer, please answer **Questions B1 to B19** for the **FIRST** summer you participated. You will be asked about your second summer experience later on in the survey.*

### Education Component

**B1. Please indicate the educational activities in which you participated during your first BBSI summer.**

*(MARK ONE IN EACH ROW)*

	Yes	No
Formal courses taught by BBSI faculty.....	1	2
Research seminars led by BBSI faculty.....	1	2
Seminars/lectures given by outside speakers..	1	2
Seminars in which students presented and discussed their research.....	1	2
Other ( <i>PLEASE SPECIFY</i> ).....	1	2
_____		
Other ( <i>PLEASE SPECIFY</i> ).....	1	2
_____		

**B2. Please indicate the subjects/topics covered in the BBSI courses/seminars/lectures that you attended in your first BBSI summer.**

*(MARK ONE IN EACH ROW)*

	Yes	No
<b>Academic subjects/research topics</b>		
Bioinformatics.....	1	2
Bioengineering.....	1	2
Other engineering.....	1	2
Biology.....	1	2
Statistics.....	1	2
Computer programming.....	1	2
Ethics.....	1	2
Research tools and techniques.....	1	2
Other ( <i>PLEASE SPECIFY</i> ).....	1	2
_____		
Other ( <i>PLEASE SPECIFY</i> ).....	1	2
_____		
<b>Professional development topics</b>		
Communication/presentation skills.....	1	2
Proposal writing.....	1	2
Resume preparation.....	1	2
Career planning.....	1	2



Other (PLEASE SPECIFY)..... 1 2

Other (PLEASE SPECIFY)..... 1 2

**B3. Please indicate how dissatisfied or satisfied you were with the following educational activities in your first BBSI summer.**

(MARK ONE IN EACH ROW)

	<b>Very Dissatisfied</b>	<b>Somewhat Dissatisfied</b>	<b>Somewhat Satisfied</b>	<b>Very Satisfied</b>	<b>Doesn't Apply</b>
a. Formal courses taught by BBSI faculty	1	2	3	4	9
b. Research seminars led by BBSI faculty	1	2	3	4	9
c. Seminars/lectures given by outside speakers	1	2	3	4	9
d. Seminars in which students presented and discussed their research	1	2	3	4	9
e. Courses/seminars/lectures on professional development (e.g., communication/presentation skills, proposal writing, resume preparation, career planning.)	1	2	3	4	9

**B4. With respect to the BBSI courses/seminars/lectures that you attended in your first BBSI summer, please indicate how much you disagree or agree with each of the following statements.**

(MARK ONE IN EACH ROW)

	<b>Disagree</b>	<b>Disagree Somewhat</b>	<b>Agree Somewhat</b>	<b>Agree</b>	<b>Have No Idea</b>
a. I gained fundamental knowledge in the subjects relevant to bioengineering and bioinformatics.	1	2	3	4	9
b. I refreshed my previous knowledge of useful tools.	1	2	3	4	9
c. I learned new tools and skill sets.	1	2	3	4	9
d. I bonded with other BBSI students by spending time with them in class.	1	2	3	4	9
e. I benefited from exposure to career professionals.	1	2	3	4	9
f. Formal courses and research seminars are an important feature of the BBSI program.	1	2	3	4	9

**B5. If you have any comments about the education component of the BBSI you attended, please enter them here.**

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## Research Component

**B6. Please indicate the research-related activities in which you participated during your first BBSI summer.**

(MARK ONE IN EACH ROW)

	Yes	No
Writing a proposal that described the research you planned to do.....	1....	2
Collecting and/or analyzing data or information to try to answer a research question.....	1....	2
Mentoring other students in conducting research or leading a student research team.....	1....	2
Going on research-related field trip(s) to other labs, universities, industry, etc.....	1....	2
Preparing/presenting a poster presentation that described your research and results.....	1....	2
Preparing a final written research report that described your research and results.....	1....	2
Delivering an oral presentation that described your research and results.....	1....	2
Attending student conference(s) that included students from multiple colleges.....	1....	2
Attending professional conference(s) that were not specifically for students.....	1....	2
Completing your research project (either during the summer or later on).....	1....	2

**B7. Of the following statements, which one best describes your involvement in the development of your research project in your first BBSI summer?**

(If you had more than one research project, please answer for the one you worked on the most.)

(MARK ONE)

Doesn't apply: I did not have my own BBSI research project.....	0.....
My BBSI research project was designed by someone else <u>without</u> input from me.....	1.....
Someone else had primary responsibility for designing my BBSI research project but I provided input.....	2.....
I had primary responsibility for designing my BBSI research project.....	3
Other (PLEASE SPECIFY).....	4.....

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**B8. Which field best describes the focus of your research project in your first BBSI summer?**

(MARK ONE)

Bioengineering or biomedical engineering...	1
Bioinformatics.....	2
Both fields.....	3
Other field(s) (PLEASE SPECIFY).....	4

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**B9. What percentage of your time did you spend on BBSI courses/seminars/lectures vs. “hands-on” research in your first BBSI summer?**

(ENTER YOUR BEST ESTIMATE FOR EACH)

\_\_\_\_\_ % time on courses/seminars/lectures

\_\_\_\_\_ % time on “hands-on” research

**B10. In your opinion, was the amount of time that you spent on BBSI courses/seminars/lectures and “hands-on” research in your first BBSI summer ... ?**

(mark one in each column)

	<u>Courses/ Seminars/Lectures</u>	<u>“Hands-on” Research</u>
Too little.....	1.....	1
About right.....	2.....	2
Too much.....	3.....	3
Have no idea.....	9.....	9

**B11. Please indicate how dissatisfied or satisfied you were with the following aspects of your research experience in your first BBSI summer?**

(MARK ONE IN EACH ROW)

	<u>Very Dissatisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Somewhat Satisfied</u>	<u>Very Satisfied</u>	<u>Doesn't Apply</u>
a. The research project(s) you worked on	1	2	3	4	9
b. The amount of involvement you had in selecting or designing your research project(s)	1	2	3	4	9
c. The overall supportiveness of your faculty mentor(s)	1	2	3	4	9
d. The adequacy of the technical guidance you received	1	2	3	4	9
e. The extent to which you felt you were an integral part of a research team	1	2	3	4	9
f. The independence you had in doing your work	1	2	3	4	9

**B12. With respect to your experience with “hands-on” research in your first BBSI summer, please indicate how much you disagree or agree with each of the following statements.**

*(MARK ONE IN EACH ROW)*

	Disagree	Disagree Somewhat	Agree Somewhat	Agree	Have No Idea
a. I learned how to properly design a research project.	1	2	3	4	9
b. I became more skilled at collecting and/or analyzing data or information to answer research questions.	1	2	3	4	9
c. I learned how to present research results.	1	2	3	4	9
d. I learned how to conduct research independently.	1	2	3	4	9
e. I learned how to collaborate with others on research.	1	2	3	4	9
f. “Hands-on” research is an important feature of the BBSI program.	1	2	3	4	9

**B13. If you have any comments about the research component of the BBSI you attended, please enter them here.**

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## Your BBSI Faculty Mentor

**B14. Please indicate the ways in which your BBSI faculty mentor helped you during your first BBSI summer (Column A) and also after you completed the BBSI program (Column B).**

*(MARK ONE IN COLUMN (A) AND ONE IN COLUMN (B) FOR EACH ROW)*

	(A)			(B)		
	During BBSI			After BBSI		
	Yes	No	Doesn't Apply	Yes	No	Doesn't Apply
Advised you on the direction of your research.....	1	2	9	1	2	9
Advised you on courses to take in undergraduate school.....	1	2	9	1	2	9
Advised you on graduate school plans.....	1	2	9	1	2	9
Advised you on career choices.....	1	2	9	1	2	9
Wrote recommendation letter(s) for employment...	1	2	9	1	2	9
Wrote recommendation letter(s) for graduate school applications.....	1	2	9	1	2	9
Wrote recommendation letter(s) for fellowship/ grant/etc. applications.....	1	2	9	1	2	9
Other ( <i>PLEASE SPECIFY</i> ).....	1	2	9	1	2	9
Other ( <i>PLEASE SPECIFY</i> ).....	1	2	9	1	2	9

**B15. Not including yourself, how many BBSI students did your faculty mentor advise in your first BBSI summer?**

(IF YOU DON'T KNOW, PLEASE ENTER 99)

Number of other BBSI students advised by your faculty mentor: \_\_\_\_\_

**B16. Please indicate whether or not you continued your first summer's BBSI research into the academic year, either with faculty/students or by yourself?**

(MARK ONE IN EACH ROW)

	Yes	No
With a faculty mentor at your BBSI institution.....	1	2
With a faculty advisor at your home institution.....	1	2
With other faculty.....	1	2
With other students.....	1	2
By yourself.....	1	2

**B17. On average, including both formal and informal activities, how frequently did you socialize with your faculty mentor and other BBSI students in your first BBSI summer?**

(MARK ONE IN EACH ROW)

	How frequently?				
	Not at All	Once a Month	2-3 Times a Month	4-5 Times a Month	6 or More Times a Month
a. With your faculty mentor	9	1	2	3	4
b. With BBSI students	9	1	2	3	4

**B18. a. Did you stay in touch with your faculty mentor after you completed your first BBSI summer?**

(MARK ONE)

Yes.....1.....  
 No.....2.....

**b. Did you stay in touch with other BBSI students after you completed your first BBSI summer?**

(MARK ONE)

Yes.....1.....  
 No.....2.....

**B19. If you have any comments about your faculty mentor in your first BBSI summer, please enter them here.**

\_\_\_\_\_

## Second BBSI Summer

### B20. Were you informed that your BBSI had a second-summer option?

(mark one)

Yes..... 1 → CONTINUE

No..... 2 → SKIP TO QUESTION B29

### B21. From which sources did you learn about the second-summer option?

(MARK ONE IN EACH ROW)

	Yes	No
The BBSI program director, coordinator, or other administrator.....	1	2
BBSI faculty/researchers.....	1	2
BBSI brochure.....	1	2
Current or former BBSI students.....	1	2
Website (BBSI, NSF, NIH, institution).....	1	2
Other (PLEASE SPECIFY).....	1	2
_____		
Other (PLEASE SPECIFY).....	1	2
_____		

### B22. Did you want to return for a second BBSI summer?

(MARK ONE)

Yes..... 1

No..... 2

### B23. Did you attend the same BBSI for a second summer?

(MARK ONE)

Yes..... 1 → CONTINUE

No..... 2 → (IF NO, PLEASE EXPLAIN WHY YOU DID NOT RETURN AND THEN SKIP TO SECTION B29)

### B24. Please indicate the educational activities in which you participated during your second BBSI summer?

(MARK ONE IN EACH ROW)

	Yes	No
Formal courses taught by BBSI faculty.....	1	2
Research seminars led by BBSI faculty.....	1	2
Seminars/lectures given by outside speakers. .	1	2
Seminars in which students presented and discussed their research.....	1	2
Other (PLEASE SPECIFY).....		
_____	1	2

Other (PLEASE SPECIFY).....

1 2

**B25. What percentage of your time did you spend on BBSI courses/seminars/lectures vs. “hands-on” research in your second BBSI summer?**

(ENTER YOUR BEST ESTIMATE FOR EACH)

\_\_\_\_\_ % time on courses/seminars/lectures                      \_\_\_\_\_ % time on “hands-on” research

**B26. In your opinion, was the amount of time that you spent on BBSI courses/seminars/lectures and “hands-on” research in your second BBSI summer ... ?**

(mark one in each column)

	<u>Courses/ Seminars/Lectures</u>	<u>“Hands-on” Research</u>
Too little.....	1.....	1
About right.....	2.....	2
Too much.....	3.....	3
Have no idea.....	9.....	9

**B27. With respect to your second BBSI summer, please indicate how much you disagree or agree with each of the following statements.**

(MARK ONE IN EACH ROW)

	Disagree	Disagree Somewhat	Agree Somewhat	Agree	Have No Idea/ Doesn't Apply
a. The second summer allowed me to focus a lot more on research than I could in the first summer.	1	2	3	4	9
b. Having had the first-summer experience, I was able to jump right into my research the second summer.	1	2	3	4	9
c. By the end of the second summer, I felt like a graduate student in my ability to do research.	1	2	3	4	9
d. As a second-summer student, I helped orient first-summer students and was a peer mentor to them.	1	2	3	4	9
e. One summer of BBSI would have been enough for me.	1	2	3	4	9
f. The coursework for second-summer students should be different in content from that for first-summer students.	1	2	3	4	9
g. The time required for coursework should be less for second-summer students than for first-summer students.	1	2	3	4	9
h. A two-summer program promotes a longer, more continuous connection between faculty and students.	1	2	3	4	9
i. The second-summer experience is an important feature of the BBSI program.	1	2	3	4	9

**B28. If you have any comments about the second-summer option of the BBSI program, please enter them here.**

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## Graduate Students

*NOTE: If you participated in a BBSI for more than one summer, please consider ALL of your BBSI summers when answering **Questions B29 to B31**.*

**B29. Did your BBSI include graduate students who had to satisfy the same coursework and research requirements as the undergraduate students?**

*(Consider as graduate students only those who had completed at least one semester of graduate school.)*

*(MARK ONE)*

Yes.....1.....→.....CONTINUE.....

No.....2.....→.....SKIP TO **QUESTION B32**

**B30. With respect to graduate student participants in the BBSI you attended, please indicate how much you disagree or agree with each of the following statements.**

*(MARK ONE IN EACH ROW)*

	Disagree	Disagree Somewhat	Agree Somewhat	Agree	Have No Idea
a. Undergraduate students benefit from observing the maturity and work ethic of graduate student participants.	1	2	3	4	9
b. Graduate student participants help undergraduates in considering further education and career tracks.	1	2	3	4	9
c. The BBSI program gives graduate student participants an opportunity to change direction or narrow their focus.	1	2	3	4	9
d. Allowing graduate students to participate is an important feature of the BBSI program.	1	2	3	4	9

**B31. If you have any comments about the participation of graduate students in the BBSI program, please enter them here.**

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## Effects of Your Total BBSI Experience

NOTE: If you attended a BBSI for more than one summer, please consider ALL of your BBSI summers when answering Questions B32 to B35.

### B32. To what extent do you think your BBSI experience increased each of the following?

(MARK ONE IN EACH ROW)

	Extent of Increase				
	Not At All	Some-what	A Fair Amount	A Great Deal	Have No Idea
<b>Your understanding or awareness of...</b>					
a. ...what bioengineering and/or bioinformatics are, including the variety of applications	1	2	3	4	9
b. ...how your work contributed to the “bigger picture” of research in bioengineering and/or bioinformatics	1	2	3	4	9
c. ...the variety of fields related to bioengineering and/or bioinformatics that you could specialize in	1	2	3	4	9
d. ...career options in bioengineering and/or bioinformatics	1	2	3	4	9
<b>Your skills/abilities in...</b>					
e. ...working collaboratively with others	1	2	3	4	9
f. ...working independently	1	2	3	4	9
g. ...preparing written research reports, papers, or posters	1	2	3	4	9
h. ...delivering oral research presentations	1	2	3	4	9
<b>Your...</b>					
i. ...confidence in your research skills generally	1	2	3	4	9
j. ...qualifications for jobs in bioengineering and/or bioinformatics	1	2	3	4	9
k. ...understanding of the nature of the job of a researcher	1	2	3	4	9
l. ...ability to clarify your interests and to make informed decisions about your future plans	1	2	3	4	9
m. ...confidence in your ability to succeed in graduate school	1	2	3	4	9
n. ...understanding of what graduate school is like	1	2	3	4	9
o. ...intellectual and social network of professional colleagues and friends	1	2	3	4	9

### B33. At any point in time (during or after your BBSI experience), did you author or co-author any articles about bioengineering or bioinformatics that were, or will be, published in peer-reviewed journals?

(MARK ONE)

Yes..... 1 → Number of articles: \_\_\_\_\_

No..... 2

**B34. Please indicate how dissatisfied or satisfied you were with each of the following.**

*(MARK ONE IN EACH ROW)*

	<b>Very Dissatisfied</b>	<b>Somewhat Dissatisfied</b>	<b>Somewhat Satisfied</b>	<b>Very Satisfied</b>	<b>Doesn't Apply</b>
a. Overall organization of the program at your BBSI	1	2	3	4	9
b. Your living arrangements (housing, meals)	1	2	3	4	9
c. Amount of the stipend and support package	1	2	3	4	9
d. Social/cultural activities offered by your BBSI	1	2	3	4	9
e. Your BBSI experience as a whole	1	2	3	4	9

**B35. If you have any additional comments about your BBSI experience and the effects (both positive and negative) it has had on you personally, please enter them here.**

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**B36. How do you think NSF could improve the BBSI program?**

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## SECTION C: EDUCATION PLANS AND DEGREE HISTORY

**C1. Have you applied to one or more graduate programs since your BBSI experience?**

(MARK ONE)

Yes..... 1 → CONTINUE

No..... 2 → SKIP TO QUESTION C5

**C2. How helpful was your BBSI experience in preparing you for graduate school?**

(MARK ONE)

Not at all helpful 1

Somewhat helpful 2 → Please describe how it was helpful

Fairly helpful 3 → Please describe how it was helpful

Extremely helpful 4 → Please describe how it was helpful

Have no idea 9

**C3. Have you been accepted into one or more graduate programs since your BBSI experience?**

(MARK ONE)

Yes..... 1 → CONTINUE

No..... 2 → SKIP TO QUESTION C5

**C4. Which field best describes the focus of your graduate work?**

(MARK ONE)

Bioengineering or biomedical engineering... 1 → Please specify subfield (if any)

Bioinformatics..... 2 → Please specify subfield (if any)

Both fields..... 3 → Please specify subfield (if any)

Other field(s) (PLEASE SPECIFY)..... 4

**C5. What was your highest degree expectation before your BBSI experience? What is your highest degree expectation today?**

*(MARK ONE IN EACH COLUMN)*

	<b>(A) Expectation Before BBSI</b>	<b>(B) Expectation Today</b>
Undecided	01	01
Associate of Arts (AA)	02	02
Bachelor's (BA or BS)	03	03
Master's (MA, MS, or MBA)	04	04
PhD	05	05
MD	06	06
MD/PhD (dual degrees from a joint MD/PhD program)	07	07
MD <b>and</b> PhD (degrees from separate MD and PhD programs)	08	08
LLB or JD	09	09
Other ( <i>PLEASE SPECIFY</i> ) _____	10	10

**C6. Please provide your complete degree history and your current enrollment status.**

(IF MORE THAN ONE MAJOR FOR A PARTICULAR DEGREE, PLEASE LIST ALL MAJORS)

<b>Degree History: Have you already received a .... ?</b>						
Bachelors's degree...	No	Yes	→	(degree) _____	(major/specialty) _____	(year) _____
	0	1		(degree) _____	(major/specialty) _____	(year) _____
Master's degree.....	No	Yes	→	(degree) _____	(major/specialty) _____	(year) _____
	0	1		(degree) _____	(major/specialty) _____	(year) _____
Professional degree (e.g., MD, JD).....	No	Yes	→	(degree) _____	(major/specialty) _____	(year) _____
	0	1		(degree) _____	(major/specialty) _____	(year) _____
Research doctorate (e.g., PhD, DSc, DEng).....	No	Yes	→	(degree) _____	(major/specialty) _____	(year) _____
	0	1		(degree) _____	(major/specialty) _____	(year) _____

<b>Current Enrollment Status: Are you currently enrolled in a .... ?</b>						
Graduate program (including professional programs such as medicine, law, etc.)	No	Yes	→	(type of program) <i>menu</i>	(major/specialty) _____	
	0	1		(type of program) <i>menu</i>	(major/specialty) _____	
				<i>Web instruction:</i> type of program is a drop-down menu with categories: master's, professional (e.g., MD, JD), research doctorate (e.g., PhD, DSc, DEng), MD/PhD		
Undergraduate program.....	No	Yes	→	(current level) <i>menu</i>	(major/specialty) _____	
	0	1		<i>Web instruction:</i> level is a drop-down menu with categories: freshman, sophomore, junior, senior (including 5 <sup>th</sup> or 6 <sup>th</sup> year)		

## SECTION D: CAREER PLANS AND JOB HISTORY

**D1. To what extent has your interest in a career in the following fields and sectors increased or decreased as a result of your BBSI experience?**

(MARK ONE IN EACH ROW)

	Decreased a Lot	Decreased Somewhat	Had No Effect	Increased Somewhat	Increased a Lot	Have No Idea
<b>Fields</b>						
a. Bioengineering or Biomedical Engineering	1	2	3	4	5	9
b. Bioinformatics	1	2	3	4	5	9
c. Other engineering field (PLEASE SPECIFY) _____	1	2	3	4	5	9
d. Other science field (PLEASE SPECIFY) _____	1	2	3	4	5	9
<b>Sectors</b>						
e. College/university	1	2	3	4	5	9
f. Industry/for-profit organization						
g. Non-profit organization	1	2	3	4	5	9
h. Government	1	2	3	4	5	9

**D2. Excluding student employment such as research/teaching assistantships and internships, have you applied for one or more jobs related to bioengineering or bioinformatics since your BBSI experience?**

(MARK ONE)

Yes..... 1 → CONTINUE

No..... 2 → SKIP TO **QUESTION D5**

**D3. Have you held one or more jobs related to bioengineering or bioinformatics since your BBSI experience?**

(MARK ONE)

Yes..... 1 → CONTINUE

No..... 2 → SKIP TO **QUESTION D5**

**D4. How helpful do you think your BBSI experience was in preparing you for any of the jobs related to bioengineering or bioinformatics that you have held?**

*(MARK ONE)*

- Not at all helpful 1
- Somewhat helpful 2 → Please describe how it was helpful  
\_\_\_\_\_
- Fairly helpful 3 → Please describe how it was helpful  
\_\_\_\_\_
- Extremely helpful 4 → Please describe how it was helpful  
\_\_\_\_\_
- Have no idea 9

**D5. Excluding student employment such as research/teaching assistantships and internships, are you currently employed (in any field)?**

*(MARK ONE)*

- Yes..... 1 → CONTINUE
- No..... 2 → SKIP TO **QUESTION E1**

**D6. Which field best describes the work you do in your current job?**

*(MARK ONE)*

- Bioengineering or biomedical engineering... 1 → Please specify subfield (if any)  
\_\_\_\_\_
- Bioinformatics..... 2 → Please specify subfield (if any)  
\_\_\_\_\_
- Both fields..... 3 → Please specify subfield (if any)  
\_\_\_\_\_
- Other field(s) (PLEASE SPECIFY)..... 4  
\_\_\_\_\_

**D7. By which of the following kinds of organizations are you currently employed?**

*(MARK ALL THAT APPLY)*

- College/university (excluding student employment)..... 1
  - Industry/for-profit organization..... 2
  - Non-profit organization..... 3
  - Government..... 4
  - Other (PLEASE SPECIFY)..... 5
- \_\_\_\_\_

**D8. What are your current job titles?**

*(ENTER ALL TITLES)*

\_\_\_\_\_

\_\_\_\_\_

## SECTION E: BACKGROUND INFORMATION

*NOTE: The following information will help us interpret your responses to the previous questions. ALL of your responses to this questionnaire are strictly confidential and will not be released to anyone outside of our small research project team.*

**E1. What is your age?** \_\_\_\_\_

**E2. What is your sex?**

(MARK ONE)

Male..... 1

Female..... 2

**E3. What is your ethnicity?**

(MARK ONE)  
Hispanic or Latino..... 1

Not Hispanic or Latino..... 2

**E4. What is your race?**

(MARK ONE)

American Indian or Alaskan Native..... 1

Asian..... 2

Black or African American..... 3

Native Hawaiian or Pacific Islander..... 4

White..... 5

Combination of Asian and White..... 6

Combination that includes any of the following:  
American Indian or Alaskan Native; Black or  
African American; Native Hawaiian or Pacific  
Islander..... 7

**E5. If you have any comments about this survey, please enter them here.**

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**THANK YOU VERY MUCH FOR YOUR PARTICIPATION IN THIS STUDY**

**As a token of our appreciation, we will send you a \$20 AMAZON.COM gift certificate  
when we receive your completed questionnaire**

**If you have questions, please contact Jongwon Park: 703-247-8550, bbsi@wdc.sri.com**